WHAT IS CLAIMED IS:

1. A coating dispersion for coating an energy storage device comprised of graphite, carbon black or a mixture thereof, a binder, and one or more cross-linking agents, wherein the coating dispersion is applied as a homogenous aqueous dispersion which forms a protective film on the energy storage device, and wherein the binders are selected from the group comprising styrene acrylic, butadiene acrylonitrile, butadiene styrene, epoxy and epoxy ester.

2. The coating dispersion of claim 1, wherein the cross-linking agent comprises melamine, carbodiimide, phenolic and acid catalyst, or mixtures thereof.

3. The coating dispersion of claim 1, wherein the ratio of the graphite, carbon black or mixture thereof to binder is in the range of about 1 to 6.

4. The coating dispersion of claim 3, wherein the ratio of the graphite, carbon black or mixture thereof to binder is in the range of about 1 to 4.

5. The coating dispersion of claim 3, wherein the dispersion has a water content between about 30 to about 90% by weight.

6. The coating dispersion of claim 5, wherein the graphite, carbon black or mixture thereof content contains a dry mass between about 10 – 60% by weight.

7. The coating dispersion of claim 3, wherein the dispersion additionally contains one or more defoamers, preservatives, dispersing agents, wetting agents, surfactants or mixtures thereof.

8. The coating dispersion of claim 7, wherein the one or more defoamers, preservatives, dispersing agents, wetting agents, surfactants or mixtures thereof comprise between about 0.05 to about 5% by weight.

9. The coating dispersion of claim 8, wherein the dispersion contains about 0.05 to about 5% by weight of a wetting agent.

10. The coating dispersion of claim 7, wherein the dispersion contains about 0.05 to about 5% of a surfactant.

11. The coating dispersion of claim 6, wherein the curing agent is a partially alkylated melamine with higher imino group.

12. The coating dispersion of claim 10 comprising from about 0 to about 5% by weight of second cross-linking agent.

13. The coating dispersion of claim 12, wherein the second cross-linking agent is carbodiimide.

14. The coating dispersion of claim 11 further comprising a catalyst selected from the group consisting of amine salt of para-Toluene Sulfonic Acid, epoxy blocked Dinonylnaphthalene Sulfonic acid, or mixtures thereof.

15. The coating dispersion of claim 14, wherein the dispersion has a viscosity of between about 50 to about 1200 cps.

16. The coating dispersion of claim 15, wherein the binder contains an epoxy ester of acid number of 10-100.

17. The coating dispersion of claim 15, wherein the dispersion contains styrene and acrylic having a styrene/acrylic ratio in the range of about 0.01 to about 9.

18. The coating dispersion of claim 15, wherein the dispersion contains styrene butadiene resin and acrylic having a styrene/butadiene ratio in the range of about 0.1 to about 9.

19. The coating dispersion of claim 15 wherein the dispersion contains butadiene acrylonitrile having a ratio in the range of about 0.01 to about 9.

20. The coating dispersion in claim 13 is cured at temperature ranging from about 100 °C to about 250 °C for about 15 seconds to about 16 minutes.

21. The coating dispersion of claim 1, wherein the dispersion forms a protective film having a conductivity in the range of about 5 to 100 ohm per square.

22. The coating dispersion of claim 1, wherein the resistance of a protective film formed by the coating dispersion is not more than twice the initial value after exposure of the conductive film to a 40% KOH solution for a period of 72 hours at 80°C.

23. The coating dispersion of claim 1, wherein the energy storage device is a battery, fuel cell or capacitor.

24. An energy storage device containing an electrically conductive protective film deposited from the coating dispersion of claim 1, wherein the conductive protective film is in the range of about 5 to about 200 microns thick.

25. An alkaline battery containing an electrically conductive protective film deposited from the coating dispersion of claim 1, wherein the conductive protective film is in the range of about 20 to about 100 microns thick.

26. A fuel cell containing an electrically conductive protective film deposited from the coating dispersion of claim 1, wherein the conductive protective film is in the range of about 5 to 200 microns thick.

27. A fuel cell containing an electrically conductive protective film deposited from the coating dispersion of claim 1, wherein the conductive protective film is in the range of about 20 to about 100 microns thick.

28. A capacitor containing an electrically conductive protective film deposited from the coating dispersion of claim 1, wherein the conductive protective film is in the range of about 5 to about 200 microns thick.

29. A capacitor containing an electrically conductive protective film deposited from the coating dispersion of claim 1, wherein the conductive protective film is in the range of about 20 to about 100 microns thick.